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NEW SITE IDENTIFICATION

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DEPT. OF ENVIRONMENTAL QUALITY
TECHNICAL SERVICES OFFICE

24776

Part A – To Be Completed By Observer	
1. Person Initiating Report: George Swaney	Phone: 533-4380
Contractor WAG Manager: Steve Wilkinson	Phone: 526-4150
2. Site Title: Abandoned Discharge Lines, TRA-608 Area to TRA-701 Chemical Leach Pond (CLP) TRA-62	
3. Describe the conditions that indicate a possible inactive or unreported waste site. Include location and description of suspicious condition, amount or extent of condition and date observed. A location map and/or diagram identifying the site against controlled survey points or global positioning system descriptors shall be included to help with the site visit. Include any known common names or location descriptors for the waste site.	

As noted on the attached schematic P-ST005-TRA-MISC-01, there are two drain lines from the TRA-608 demineralizer building. These two drain lines from TRA-608 connect to the discharge line to the old Chemical Leach Pond (CLP) (Line 12"-SWE-608A). In addition to the two connections from TRA-608, Line 12"-SWE-608A also received effluent from the TRA-708C neutralization tank and the TRA-731A Brine Pit. The line 12"-SWE-608A was constructed in approximately 1952 and used through February 1999, when it was decommissioned. A portion of line 12"-SWE-608A (on the west end of TRA-608) remains in service from the west end of TRA-608 to the tie in with the sanitary sewer at manhole 16-S. The remainder of line 12"-SWE-608A between this cut point and the CLP was left in place. A grout plug was installed in the outfall of the line at the CLP. The CLP was addressed under the FFA/CO and an engineered cover has been installed.

The line 12"-SWE-608A is a single walled vitreous clay pipe and is direct buried. Configuration of the line, includes common bell and spigot joints that may or may not have been sealed. This may have allowed an occasional discharge from the line to the surrounding soil at various points along the line throughout the useful life of the line.

The line 12"-SWE-608A from the brine pit to the CLP was flushed with water during the less than 90-day storage closure of the TRA-731A Brine Pit. The actions addressing closure of the TRA-731A Brine Pit were approved by IDEQ under Section 5.21 of the May 6, 1999 Notice of Violation Consent Order. The drain line from the east end of TRA-608 to the connection to line 12"SWE-608A served the east end/back end units of the demineralizer system. This line only managed non-hazardous effluent and was removed from service at the time that the Reverse Osmosis System was brought on line in February/March of 1999. The drain line on the west end of TRA-608 served the west end of the demineralizer system and is still in service as a connection between TRA-608 and the sanitary sewer at manhole 16-S. This line only manages non-hazardous effluent.

During a brief period of the life of the abandoned portion of 12"-SWE-608A, RCRA hazardous waste, D009 toxic characteristic for mercury (Hg), was discharged from the TRA-731A Brine Pit to the CLP. This documented activity occurred during a 44-day period during May to July of 1995. The 1997 Notice of Violation (NOV) and 1999 Notice of Violation Consent Order (NOV/CO) addressed this event.

Furthermore, in the early 1990s discharge limits were established in the Operation & Maintenance Manual (O&MM) to require neutralization of wastewater to ensure it met more restrictive discharge limits of >3 pH and < 11 pH in the early 1990's. Therefore, from 1952 to the early 1990's, there is a possibility that wastewater was discharged that was outside this pH range.

Section 5.5 of the 1999 NOV/CO says that, "DOE has resolved Violation Nos. 3-36, 95-128, and 134 by having performed a risk assessment and having submitted the risk assessment findings to the Department's Remediation Bureau. The risk assessment indicated that the concentration of mercury released to the Test Reactor Area CLP from the TRA-731 A Brine Pit did not increase the existing risk beyond that of the mercury already found in the CLP. No further corrective actions will be conducted under this Consent Order concerning contamination in the CLP".

Apart from the two independent and separate releases (1982, Waste Disposal Support Structure; 1992, Portable Tank from CFA) documented in the Final Record of Decision (ROD), DOE/ID-10586, for the Test Reactor Area, all the mercury, barium and other contaminants found in the CLP were transported to this facility through these product lines.

In section 5.2.1.2 of the ROD, CERCLA site TRA-06 is discussed. In this discussion barium and mercury are identified as the two principle contaminants of concern for the CLP. This was determined from the 1990 sampling data. In the last paragraph on page 5-6 of the ROD it is noted that, "The total mass of mercury contained in the CLP from all past disposal operations is estimated to be approximately 8.0E+07mg." and "The mercury contribution from the 1995 release is relatively small and is not expected to increase human health or ecological risk at the site."

8.0E+07mg is the equivalent of 80,000,000 mg or 80,000 g or 80 kg of mercury. The estimated release of mercury that occurred in 1995 from the TRA-731 tanks was < 500 g or <0.5 kg. So during the life of the CLP; 1952 to 1999, 47 years of service, 79.5 kg was discharged through the transfer lines from TRA-608 to TRA-701 CLP. This volume averages to approximately 1.7 kg of mercury discharged on an annual basis and one additional slug of mercury; <0.5 kg during a 44 day period in May to July of 1995.

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When the CERCLA Site TRA-06 CLP was originally identified the transfer lines should have been investigated / identified as part of that site or submitted for consideration as a separate site. These transfer lines, and specifically 12"-SWE-608A were the primary source of all contaminants found in the TRA-06 site. With the submittal of this New Site Identification we are correcting an oversight in regard to the original identification of the TRA-06 site by identifying these transfer lines as the mechanism for transfer of the contaminated wastewater to former CLP and that the configuration / construction of the transfer lines present a potential for releases to the environment throughout their run.

Part B – To Be Completed By Contractor WAG Manager

4. Recommendation:

x This site meets the requirements for an inactive waste site, requires investigation, and should be included in the INEEL FFA/CO Action Plan. Proposed Operable Unit assignment is recommended to be included in the FFA/CO.
WAG: 10 Operable Unit: 10-08

☐ This site DOES NOT meet the requirements for an inactive waste site, DOES NOT require investigation and SHOULD NOT be included in the INEEL FFA/CO Action Plan.

5. Basis for the recommendation:

1. Source Description: The source of the wastes associated with this potential site has been identified as the primary drain line (12SWE-608A) which connected two (2) drain lines from TRA-608, one (1) drain line from TRA-731A Tank (Brine Pit) and one (1) drain line from TRA-708C (ENU) to the former Chemical Leach Pond (CLP). Both of these structures (TRA-731A from 1952 and TRA-708C from the early 1980s) were utilized as part of the TRA-608 Demineralizer System until February/March 1999, when the Reverse Osmosis System was brought on line. During this time period, the drain line was not knowingly used to manage effluent containing hazardous wastes, with the exception of a short time period between May and June, 1995 (44 days). During this brief period, it is estimated that the line transported and discharged approximately <0.5kg of materials containing RCRA hazardous wastes (D009, mercury) to the former CLP. Although the source unit was addressed under the 1997 NOV/CO actions, no closure requirements were specified for the abandoned portion of the discharge line.

   Secondly and more importantly, during the evaluation of CERCLA Site TRA-06 (CLP) it was determined that most of the contaminants found to be present in the CLP were transported to that location through this drain line (12"SWE-608A). Calculations performed, based upon soil contamination concentrations from the CLP, indicate that approximately 80kg of mercury have been released to the CLP over the life of the drain line (1952-1999). Complete source contaminant(s) identification and concentrations are not known at this time. Given the drain line material and construction specifications (bell / spigot joints, vitreous clay, direct buried) there is reason to believe intermittent releases along the piping run may have occurred.

2. Exposure Pathway: Potential exposure pathways associated with the drain line (12"SWE-608A) potentially could include inhalation, ingestion and absorption through direct contact with either the materials that may have leaked from the piping or the soils surrounding it. As the physical configuration of the line is a single walled vitreous clay pipe with common bell and spigot joints it is possible that materials containing the previously identified hazardous wastes (D009, mercury) may have been released to the environment at multiple locations throughout the run of the drain line.

3. Potential Contaminants of Concern: At this time a complete list of potential contaminants of concern is not known. Section 5.2.1.2 of the Comprehensive Record of Decision states barium and mercury as the primary contaminants of concern for the CLP. As a complete evaluation of the drain line and it's surrounding soils has not been performed it is impossible to state that barium and mercury are the only contaminants of concern at this potential site. Although the calculated amount of mercury transported through this drain line into the CLP is approximately >80kg, the source amount of this and possibly other contaminants of concern are unknown at this time. Based upon the estimated amount of known contaminants deposited in the CLP from this drain line further investigation into the possibility of and potential adverse affect from any releases to human health and the environment is warranted.

4. Description of interfaces with other Programs: Interfaces with other programs would include but not be limited to TRA Facility Operations, Voluntary Consent Order and Environmental Affairs. TRA is an active facility where the potential exists for coming into contact with these materials and/or soils during any construction and/or field activities in this immediate area.

The basis for recommendation must include: (1) source description; (2) exposure pathways; (3) potential contaminants of concern; and (4) descriptions of interfaces with other programs, as applicable (e.g., D&D, Facility Operations, etc.)

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6. Contractor WAG Manager Certification: I have examined the proposed site and the information submitted in this document and believe the information to be true, accurate, and complete. My recommendation is indicated in Section 4 above.

Name: Stephen Wilkinson Signature: S O Wilkinson Date: 03/13/02

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Part C – To Be Completed By INEEL FFA/CO WAG Managers

7. WAG Operable Unit:

DOE WAG Manager's Concurrence: ☒ Concur with recommendation. ☐ Do not concur with the recommendation.

Signature: Allen E. Nelson

Date: 24 FEB 03

EPA WAG Manager's Concurrence: ☒ Concur with recommendation. ☐ Do not concur with the recommendation.

Signature: Wayne Pierre

Date: 11/5/02

State of Idaho WAG Manager's Concurrence: ☒ Concur with recommendation. ☐ Do not concur with the recommendation.

Signature: Chris A. Cody

Date: 11/19/02

Explanation follows:

Part D – To Be Completed By The INEEL FFA/CO Responsible Program Managers (RPM's)

8. FFA/CO RPM's Concurrence:

For DOE-ID
Name: Kathleen Hain Signature: Kathleen E Hain Date: 2/26/03
☒ Concur
☐ Do not concur. Explanation follows:

For EPA Region X
Name: Wayne Pierre Signature: Wayne Pierre Date: 11/6/02
☒ Concur
☐ Do not concur. Explanation follows:

For State of Idaho
Name: Dean Nygard Signature: Daryl F Koch Date: 11/19/02
☒ Concur
☐ Do not concur. Explanation follows: